

REMARKS/ARGUMENTS

This Amendment and the following remarks are intended to fully respond to the Final Office Action mailed June 25, 2008. In that Final Office Action claims 21-53 were examined, and all claims were rejected. More specifically, claims 21-53 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Patent No. 5,996,089 to Mann et al., hereinafter “Mann” in view of *HAMFS File System*, by Shinkai et al. hereinafter “Shinkai.”

In this Amendment, claims 21, 30, 38, and 46 have been amended. No claims have been canceled, or added. Based on the foregoing amendments and following remarks, reconsideration and further Examination are respectfully requested.

Interview Summary

The undersigned thanks Examiner Lu and Examiner Kerzhner for the telephone interview conducted on November 25, 2008. During the interview, a number of the pending claims (21-53) were discussed. Also, some proposed claim amendments and the cited references (Mann and Shinkai) were discussed. Examiner Kerzhner indicated that the proposed amendments appeared to overcome the cited references. No agreement was reached on allowance of claims. The claim amendments made herein are similar to, but are not the same as, the claim amendments discussed with Examiner Kerzhner and Examiner Lu during the telephone interview.

Claim Rejections – 35 U.S.C. § 103

Applicants respectfully traverse the rejection of claims 21-53 under 35 U.S.C. § 103(a). As described below, the combination of Mann and Shinkai fail to teach all of the elements of the amended claims.

As previously noted, Mann describes a method for “redundantly storing data in a distributed computer system having at least three processor systems.” *Mann*, col. 2, lines 20-21. Mann discloses “interconnecting each one of the processor systems in a point to point two way channel interconnection with each of the other processor systems, and storing input data across the processor systems according to a distributed, redundant storage process.” *Id.* at col. 2, lines 24-28. In the absence of a failure of any of the processor systems the load is balanced across the

processor systems. *Id.* at col. 2, lines 37-41. In the presence of a failure of one of the processor systems, redundant data is read from a non-failed processor system in place of the data stored at the failed processor system. *See Id.* at col. 2, lines 41-47.

Claim 21 has been amended to clarify that the epoch identifier identifies “a last configuration change made to the logical volume while an associated extent was on line and available for access by a file system, wherein the epoch identifier is used to determine a configuration status based on a comparison of the epoch identifier from each extent of the logical volume.” Mann does not disclose such a feature. The office action points to the “Home Block” discussed in Mann as allegedly equivalent to an epoch identifier. Although, the “Home Block” disclosed in Mann stores information about a cluster volume, it does not identify “a last configuration change made to the logical volume while an associated extent was on line,” as recited in claim 21.

Shinkai fails to compensate for the deficiency in Mann. Shinkai discloses a system that uses tokens to control access to files. Shinkai teaches several types of tokens such as NAME, TIME, SIZE, ATTR, and DATA tokens. The tokens allow file data to be consistently maintained. However, none of the tokens correspond to an epoch identifier that identifies “a last configuration change made to the logical volume while an associated extent was on line and available for access by a file system,” as recited in claim 1. Indeed, the tokens of Shinkai authorize clients possessing the tokens to read or write data – such as metadata – to a file, and do not identify configuration changes made to logical volumes. Accordingly, both Shinkai and Mann fail to teach all of the elements of claim 21 making claim 21 allowable over the combination of references. Claims 22-29 depend from claim 21 and include all of the limitations of claim 21. Accordingly, each of claims 22-29 are allowable over Shinkai and Mann for at least the same reasons.

Claim 30 is directed to a data storage subsystem that includes a first computer-storage medium storing one or more first extents. Claim 30 has been amended to recite, *inter alia*, “each first extent includes a first data structure storing an epoch identifier, the epoch identifier identifying a last configuration change made to the first logical volume while an associated one of the first extents was on line and available for access by a data manager.” As noted above, neither Mann nor Shinkai teach or suggest an epoch identifier that identifies “a last configuration change made to the first logical volume while an associated one of the first extents was on line

and available for access by a data manager.” Accordingly, claim 30 and claims 31-45 which depend from claim 30 are patentable over Shinkai and Mann.

Claim 38 is directed to a computer-storage medium and has been amended to recite, among other things, “the epoch value identifying a last configuration change made to the logical volume while an associated one of each extent was on line and available for access by a data manager.” Mann and Shinkai alone, or in combination, fail to teach or suggest an epoch identifier that identifies “a last configuration change made to the logical volume while an associated one of each extent was on line and available for access by a data manager,” as recited by claim 38.

Moreover, neither Mann nor Shinkai teach or suggest “receiving a user selection indicating a selected consistency level; and determining a configuration status based on the comparison of the epoch value from each extent of the logical volume and the copy epoch value from each extent of a mirrored copy of the logical volume, and the selected consistency level, wherein the configuration status indicates whether the first logical volume can be exposed as on line and available for access by the data manager,” as recited in claim 38. Although Mann discloses that a user may select a configuration for the RAID controller, this is not the same as specifying a level of consistency between epoch values from each extent as is recited in claim 38. In other words, the claimed embodiment allows a user to determine whether, and to what degree, the epoch values may differ and the volume still be exposed as on line. Neither Mann nor Shinkai disclose such a feature. Claims 39-45 depend from claim 38 and are allowable over Shinkai and Mann for at least the same reasons as claim 38.

Claim 46 is directed to a computer-implemented method and has been amended to recite “the epoch value identifying a last configuration change made to the logical volume while an associated one of each extent was on-line and available for access by a file system.” As noted above, neither Mann nor Shinkai teach or suggest an epoch identifier that identifies “a last configuration change made to the logical volume while an associated one of each extent was on-line and available for access by a file system.” Accordingly, claim 46 and claims 47-52 which depend from claim 46 are patentable over Mann and Shinkai. Additionally, claim 46 has been amended to clarify that the selected consistency level “specifies a level of consistency between the epoch values and the copy epoch values.” Mann and Shinkai fail to teach this additional

element of claim 46, which makes claim 46 and claims 47-52 which depend from claim 46, further patentable over Shinkai and Mann.

Conclusion

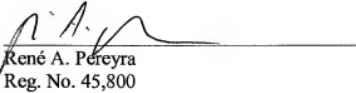
This Amendment fully responds to the Final Office Action mailed on June 25, 2008. Still, the Office Action may contain arguments and rejections that are not directly addressed by this Amendment because they are rendered moot in light of the preceding arguments in favor of patentability. Hence, failure of this Amendment to directly address an argument raised in the Final Office Action should not be taken as an indication that the Applicant believes the argument has merit. Additionally, failure to address statements/comments made by the Examiner does not mean that the Applicants acquiesce to such statements or comments. Furthermore, the claims of the present application may include other elements, not discussed in this Amendment, which are not shown, taught, or otherwise suggested by the art of record. Accordingly, the preceding arguments in favor of patentability are advanced without prejudice to other bases of patentability.

It is believed that no additional fees (in addition to the extension and RCE fees) are due with this Amendment. However, the Commissioner is hereby authorized to charge any deficiencies or credit any overpayment with respect to this patent application to deposit account number 13-2725. Any additional extensions of time necessary for entering this Amendment are hereby requested.

In light of the above remarks and amendments, it is believed that the application is now in condition for allowance and such action is respectfully requested. Should any additional issues need to be resolved, the Examiner is requested to telephone the undersigned to attempt to resolve those issues.

Respectfully submitted,

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Date: December 29, 2008

